

### ABSTRACT

A line balance correction device adapted to correct longitudinal balance of a copper pair carrying xDSL signals and to produce a cancellation signal for reducing at least one of common-mode noise and differential signal imbalance. The device may be installed at any segment of a copper pair wiring of an xDSL transmission system that requires correction of longitudinal balance. The device is adapted to be connected in parallel to the copper pair and to a local ground and includes a controller and circuitry for correcting longitudinal balance. At least one variable resistor is connected to each wire of the copper pair. The resistance of each such variable resistor being independently controlled by the controller for matching resistance of signals carried over a corresponding wire of the copper pair to the local ground.